# Jie Bao

## Personal Information


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| Address: | 7950 rue Rostand, Brossard, J4X 2R6, Quebec, Canada |
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## Education

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| Fall 2019 - Summer 2021 | **Concordia University**, Montreal, Quebec, Canada<br>*Master of Applied Science, Mechanical Engineering*, GPA: 3.98/4.3<br>Thesis: Machine Learning Techniques for Turbulence Modeling<br>Supervisor: Dr. Brian Vermeire<br><br>Applied Machine Learning - COMP551 (McGill Campus IUT), *Grade: A* |
| Fall 2015 - Winter 2019 | **Concordia University**, Montreal, Quebec, Canada<br>*Bachelor of Engineering, Aerospace Engineering*, GPA: 3.25/4.3 |
| Winter 2018 | **Embry-Riddle Aeronautical University**, Daytona Beach, Florida<br>*Exchange Semester Abroad*, Engineering GPA: 3.7/4.0 |

## Computer Skills

Python, Tensorflow, Matlab, Linux, Bash/Shell, MS Office, LaTeX, Catia, Ansys, VIM

## Work Experience

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| Current | **Graduate Student Researcher**, Computational Aerospace Lab<br>*Turbulence Modeling Technique using Machine Learning Techniques*<br><br>Performed feature quality analysis using algorithm such as Relief. Data cleaning, acquisition and analysis using Matlab and Python. Created an end-to-end ML training pipeline for turbulent production and dissipation values. Achieved over 90% $R^2$ accuracy. Currently, working on analysing the NACA 0012 airfoil. Check out the progress on Github and my other works. |
| Summer 2018 | **Intern in Structure Design & Standard**, Bombardier Aerospace<br>*Cabin Window Trade Study on Next-Gen Business Jet*<br><br>Conduct a cabin window trade study with respect to § 25.807 for future business jet program, perform cost & weight estimation for Product Planning, benchmark with competition in the same aircraft segment, proposed cabin window position, installation type, and size recommendation. |
| Summer 2017 | **R&D Intern in Advanced Systems**, Bombardier Aerospace<br>*Hydraulic System Modeling using MBSE*<br><br>modeling of the GLOBAL 7500 hydraulic system using the CAPELLA software (operational architecture down to physical architecture). Gained a comprehensive understanding of the hydraulic system. Improved system engineering MBSE approach for aircraft design Developed modeling usage standards. Presented to subject-matter experts during bi-weekly workshops. |

## Teaching Assistant

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| Current | **AERO 490 - Final Year Capstone Aerospace Engineering Design Project**<br>*Supervised by Dr. Jonathan Liscouët*<br><br>Supervise the conceptual design of a medical organs transporting drone. Motivating the student to think critically and provide guidelines on how to solve technical questions. Help online teaching transition. |

## Academic Project

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| 2018-2019 | **AERO 490 - Final Year Capstone Aerospace Engineering Design Project**<br>*Supervised by Dr. Catharine Marsden*<br><br>Conceptual design of an arctic transport aircraft. Market analysis and develop business case. Perform trade studies and constraint diagram. Aircraft static & dynamic stability compliance for airworthiness. |
| Fall 2017 | **AERO 390 - Preliminary Rudder System Design**<br>*Supervised by Dr. Susan Liscouët-Hanke*<br><br>Perform the safety and reliability assessment - ARP 4761. Define Aircraft and System level requirements using interdisciplinary approach - RFLP method. Use 3DExperience software to track the requirements and to model the rudder system physical level. |

## Engineering Competition

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| Fall 2018 | **Engineering and Computer Science Association Competitions Week**<br>*Senior Design - Concordia University, Montreal, QC*<br><br>Designed and assembled a remotely controlled car using an Arduino board and other provided material. Awarded 3$^{rd}$ position. |

## Certificate

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| May 2016 | Aircraft Familiarization Training (312h) at L'École National d'Aérotechnique |

## Languages

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| French: | Fluent |
| English: | Fluent |
| Chinese (Mandarin): | Fluent |
| German: | Basic Knowledge |

## Interests and Activities

World History, Current World Affairs, Avid Tennis player, Running, Programming